Remarks

The prior claims have been cancelled and newly presented as new claims 34 - 67. Favorable reconsideration is respectfully requested.

Former claims 29 and 33 had been objected to but indicated to be allowable if rewritten in independent form, with all the limitations of the base claim and any intervening claims. This has been done, claim 44 claiming the subject matter of former claim 33, and claim 48 claiming the subject matter of former claim 29. New dependent claims 45, 46, 48, 53, and 58 further limit the subject matter of these claims, and hence should be allowable as well. New claim 34 corresponds roughly to former claim 1, but is narrower with regard to which auxiliary monomers are optionally present, and with regard to the manner of preparation of the final product, by adding the accelerant after completion of polymerization and then spray drying, so the accelerant has no chance to react with the polymer, as explained in the specification, or following spray drying of the polymer, the accelerant being in powder form. In both these methods, the accelerant has no opportunity to react with the polymer, and is not present during the polymerization. The composition thus contains the accelerant in unreacted form. Moreover, all the polymers and copolymers, including those which contain auxiliary monomers, have no functional groups which are reactive with amines or alkanol amines. Note that the alkanols of the (meth)acrylate monomers have been limited to those disclosed on page 4, lines 11 - 16. It should also be noted that all of the accelerants contain alkanolamine groups. In other words ordinary amines, diamines, or alkyl-substituted amines or diamines which do not also contain alkanolamine moieties, are not within the scope of the claims.

Claim 35 limits claim 34 to the polymers not containing any of the optional auxiliary monomers. Thus, the polymers of claim 35 are formed only from the monomers listed in a)i), while claims 36 - 38 limit the polymers to specific polymers disclosed on pages 5 and 6. Claim 39 requires the accelerants to be in their free (non-salt) form, while claim 40 requires the salts to be in the form of their formic and/or acetic acid salts, as disclosed on page

3, page 4, line 4, and in the examples. Claims 41 and 42 require the accelerant alkanolamines to be selected from a specific group of alkanolamines (or their salts).

Claim 44, as indicated previously, corresponds to prior claim 33, but is in independent form and should thus be allowable. Claim 45 requires the accelerants of claim 44 to be present in the form of their formic and/or acetic acid salts, while claim 46 limits the accelerants to specific accelerants. Claim 48 is a process claim for producing the polymer compositions of claim 44, and is thus the subject matter of former claim 29, which was indicated to be allowable. Claim 47 is similar to claim 48, but dependent on broader claim 34.

Claim 49 requires the alternative process of first preparing the protective colloid-containing polymer in powder form, and admixing the accelerant, also in powder form. Claim 50 requires an antiblocking agent to be present, which claim 51 specifies the nature of the antiblocking agent. Claims 52 - 55 require the protective colloid to be a polyvinyl alcohol protective colloid.

Claims 55 - 59 claim construction products containing a hydraulically settable binder and the composition of one of claims 34 - 36 or 44, claim 59 requires the cement to be a Portland or alumina cement; and claims 60 - 67 pertain to a process for accelerating th setting of a cementitious product by adding a composition of one of claims 34 or 44 or their dependent claims. No new matter is added by presentation of the new claims. All the claims are fully supported by the specification as filed, and raise no issue of new matter.

Applicants submit that the amended claims patentability distinguish over the art. Applicants respectfully note that while several references used in the initial rejections have been overcome, thus indicating progress in prosecution of the application on the part of the Office and the Applicants, some of the rejections appear have been maintained even though the claims have been substantially amended such that these rejections are no longer believed tenable. Applicants believe the claims now on file are allowable. However, if any of the claims are rejected again, Applicants do respectfully request the Examiner to carefully consider each reference with regard to the new claims, so that issues on appeal are reduced accordingly. Applicants wish to provide additional remarks relative to the references as follows.

The claimed compositions are accelerant compositions for accelerating the setting of hydraulically settable cementitious compositions such as mortars, tile adhesives, concrete, etc. Accelerants were previously supplied in solution with aqueous polymer dispersions, but as a result, both the properties of the polymer additive as well as the accelerant were severely compromised. Applicants found that by combining the accelerant with the polymer in a manner which does not allow the accelerant to degrade or otherwise react with the polymer, that both the polymer and accelerant retained their effectiveness. This was accomplished by providing a redispersible polymer stabilized by protective colloid, and spray drying the polymer at the same time as a solution of the accelerant salt, adding the accelerant to the polymer dispersion immediately prior to spray drying, or spray drying the polymer and adding dry accelerant powder to the polymer powder. Each of these methods provides a composition where the polymer and accelerant retain their individual identities, and prevent polymer degradation.

None of the prior art references cited are directed to preparing an accelerant composition for use in accelerating the setting of cement, and the skilled artisan would not look to these references to solve the problems of loss of polymer properties or accelerant effectiveness.

The object of *Thames* was to provide odorless and organic solvent-free latex or emulsion compositions having plasticizing and cross-linkable properties, for use in paints, inks, etc. (*Thames*, col. 2, lines 25 - 29). These objects of *Thames* are achieved by use of compositions which include a metallic drier which is preferably a metal salt of a fatty acid, together with a copolymer of an ester of an ethylenically unsaturated carboxylic acid and an long chain alkenol, i.e.. an aliphatically unsaturated alcohol such as 1-octenol; for example 1-octenolacrylate. *See Thames* at col. 3, lines 5 - 11; col. 8, line 35 - column 9, line 27; and claim 1. The long-chain alkenol units cause internal plasticization and also allow crosslinking (col. 2, lines 5 - 11; col. 3, lines 49 - 54; col. 3, lines 8 - 11). The requirement of the drier is noted, and sets these compositions apart from compositions such as Applicants; driers assist in crosslinking through double bonds present in the polymer (from the alkenol groups). Such driers are commonly added to oil paints, for example, to crosslink the unsaturated oils present.

The subject invention polymers do not contain (meth)acrylic esters of alkenols, only certain alkanol esters.

Pakusch teaches that the use of protective colloids as spraying assistants is inadequate and irreversibly causes formation of undesired secondary particles (col. 1, lines 38 - 45). Thus, *Pakush* teaches away from the present invention which requires protective colloids in all claims, more specifically polyvinylalcohol protective colloids in dependent claims. *Pakush* teaches that the phenolsulfonic acid/formaldehyde spray assistant condensates can be used in the form of salts with amines. However, he does not teach or suggest that salts of cement accelerants, which are alkanolamines, should be present. Nor, for dependent claims, does *Pakush* teach salts of formic and/or acetic acid.

Dreher desires to produce heat-curable binders which are formaldehyde-free, by copolymerizing an amine containing a hydroxyl group. The latter serve as crosslinkers with the carboxylic acid or dicarboxylic anhydride units present in the base polymer. *Dreher* also requires a water soluble polymer A2 which contains 50 - 100 weight percent of an ethylenically substituted mono- or dicarboxylic acid, this water soluble polymer being present in an amount of 12.5 to 87.5% by weight. Applicants redispersible polymer powders, by definition, are water insoluble. Applicants' compositions do not contain any such amount of unsaturated carboxylic acid monomers.

Ball does not disclose any of the claimed accelerants. *Ball* teaches compounds useful as thermally crosslinkable binders which contain blocked amines or alkanolamine esters. The accelerants used by Applicants are all alkanolamines. No amines free of alkanol groups are claimed, nor are alkanolamine esters. Moreover, the sole purpose of the blocked amines and alkanolamine esters of *Ball* is to provide crosslinking at elevated temperatures. Applicants' compositions are for accelerating setting of cement, which does not take place at the deblocking/crosslinking temperatures (170°C!) of *Ball*. There would be no motivation to add a blocked crosslinking agent to a redispersible polymer powder when the temperature required to crosslink cannot be reached (one cannot heat curing cement, which contains water, above the boiling point of water). This is especially true when the redispersible polymer powder contains no groups reactive with amines, and so could not be crosslinked in any case. Applicants' polymers contain no aldehyde, keto, epoxide, isocyanate, carboxylic anhydride, or aziridine groups. The presence of any of these groups in other than trace amounts would materially alter Applicants' polymers, which are principally non-crosslinkable.

The principle question addressed in determining obviousness is whether the prior art directs the skilled artisan to the claimed invention. This inquiry necessarily depends upon the problems addressed by the prior art, and the problems addressed by the subject invention. The subject invention addresses the problems of preventing polymer degradation in compositions containing both a polymer additive for cement and an accelerant for cement. Of the references cited, only *Pakusch* is directed to cement additives, but does not address either problem solved by Applicants. As stated in *In re Shaffer*, 108 USPQ 326 (CCPA 1956), a reference which does not even discuss the problems addressed cannot suggest a solution, and cannot be an obviousness defeating reference under 35 U.S.C. § 103(a). For the reasons discussed herein, Applicants believe all the claims to be allowable.

Applicants submit that the claims are now in condition for Allowance, and respectfully request a Notice to that effect. If the Examiner believes that further discussion will advance the prosecution of the Application, the Examiner is highly encouraged to telephone Applicants' attorney at the number given below.

Respectfully submitted,

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Date: January 16, 2007

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